# ABSTRACT

**Aim** : To evaluate the efficacy of sugar free xylitol based chewing gum with and without CPP-ACP in preventing enamel demineralization near the bracket margin and to investigate the effect of chewing gums on reported pain for first two days after separator placement and first seven days after the bonding and activation of appliances.

**Method** :Nine participants of age 14-25 years with bidental proclination scheduled to undergo extraction of all four first premolars were included in this study and randomly allocated to three groups (N=3, i.e.; 12 premolars per group) according to the treatment they received namely: Group I - sugar-free chewing gum containing CPP- ACP (Recaldent), Group II - sugar-free chewing gum without CPP- ACP (Happy-Dent), and Group III- No chewing gum (Active Control group). Participants who received gums were instructed to chew 2 gum pellets for 20 minutes, thrice a day for 30 days at specified timings. Cross sectional microhardness was used to quantify the enamel hardness.Pain rating at different points of time was done with VAS.The hardness values and VAS scores were analysed statistically using SPSS software.

**Results** : There was 18.56% reduction in the hardness values in one month after treatment with fixed orthodontic appliances in the control group. The use of sugar free chewing gums with and with-out CPP-ACP had reduced the hardness loss to 13.26% and 8.79% respectively. Mean pain perceived by the intervention groups is lesser than the control group at all time periods especially during the second day after separator placement and first day of activation of the arch wire

**Conclusion** : Sugar-free gum containing CPP-ACP is superior to an equivalent gum not containing CPP-ACP in prevention and remineralization of WSL.